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ABSTRACT

Information and opinion concerning research and development in Canadian educational administration is presented in three main sections. Section 1 discusses the general status of educational research in relation to the concerns of the federal government, provincial departments of education, and local school districts. Difficulties in the structure, functions and types, resources, and support for research are presented. Section 2 discusses research in educational administration conducted by university personnel, emphasizing work done at the University of Alberta. Trends in topics and types of studies are noted. Section three presents suggestions for conducting future research. Again, the suggestions are classified according to the structure, functions and types, resources, and support for research. The author concludes that Canada's research and development base has developed well in the past twenty years. (DW)

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RESEARCH AND DEVELOPMENT IN EDUCATIONAL ADMINISTRATION IN CANADA

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International Intervisitation Program in Educational Administration
July 24, 1974

The main purpose of this paper is to present some information and opinions concerning R & D in educational administration throughout Canada. Because I am more familiar with R & D at The University of Alberta than elsewhere, the content largely draws from that experience. Some information based on correspondence and publications from other sources has also been incorporated.

This paper is divided into three main sections:

(1) some information and comments about educational R & D in Canada;

(2) some information and comments about R & D in educational administration conducted by university personnel in Canada; and

(3) some suggestions concerning R & D in educational administration which have relevance to educators and researchers in different countries.

The relevant OECD definitions (OECD:1970) have been adopted for use in this paper, even though they tend to overlap. In paraphrased form they are:

(1) Research - systematic inquiry to increase knowledge or to understand a subject.

(2) Basic Research - original inquiry to provide more complete knowledge or understanding.

  (a) Pure basic research - generated by pure scientific curiosity;

  (b) Oriented basic research - undertaken to identify principles necessary to help solve practical problems.

(3) Applied Research - investigation to solve recognized practical problems.

(4) Development - systematic use of research results to introduce new processes or products, or to improve existing processes or products.

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1. EDUCATIONAL R & D IN CANADA

Educational R & D in Canada should be viewed within the overall framework of social science R & D, particularly because many related research projects fall outside the boundaries of "education". For example, the Canada Council awarded grants in 1972-3 in Psychology for projects examining motivation, cognitive style in elementary school children, and language learning. In Sociology, grants were awarded to study teachers' career patterns, and occupational and educational change in a generation.

The entire field of research in Canada has been the object of scrutiny by The Senate Special Committee on Science Policy established in 1967: this Committee's Report was published in A Science Policy for Canada, Volumes 1 - 3, 1970-3. As a result of the recommendations of this report, federal funding of research in Canada is to be re-organized. The Ministry of State for Science and Technology (MOSST) is to be the major funding agency and coordinating body for federal research grants, as shown in Figure 1. The Human Studies Research Council will probably assume the research functions formerly administered by The Canada Council.

The concerns of the Federal Government which were foremost in leading to these proposed changes were:

1. scientific research costs were increasing rapidly;
2. university scholars apparently favored basic research;
3. research often appeared to laymen to be of low quality; and
4. the organization of research seemed to need review.

The Social Science Research Council of Canada[1] has attempted to answer the above-mentioned criticisms by stating (Verney and Verney, 1974):

1. only a fraction of "scientific activities" are "research" -- many are statistical summaries: further, only 11 per cent of the research expenditures are for the human sciences;

2. only 1 per cent of the federal research expenditures of $827 million are allocated to independent human science research;

3. the criticism of research quality seems to be invalid, and ignores many of the positive achievements of the universities and scholars;

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[1] The SSRCC is a private organization which receives financial support from the Canada Council and its member societies representing law teachers, administrative sciences, geography, economics, history political science, psychology, education, sociology and anthropology.

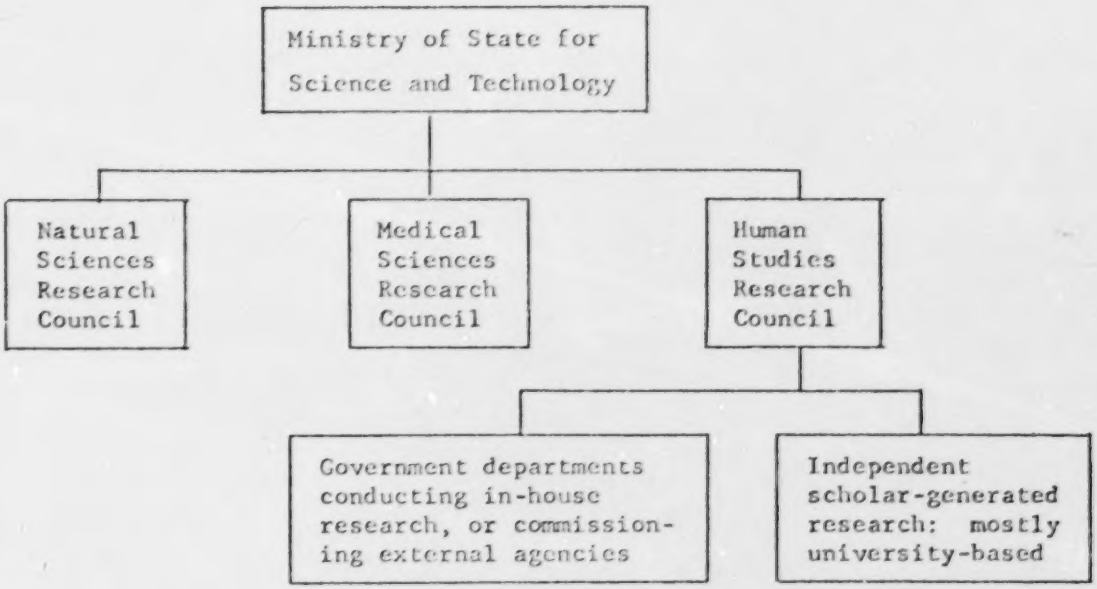
Ministry of State for Science and Technology
Natural Sciences Research Council
Medical Sciences Research Council
Human Studies Research Council
Government departments conducting in-house research, or commissioning external agencies
Independent scholar-generated research: mostly university-based

Figure 1. Proposed Organization of Federally Funded Research Agencies in Canada.

4. re-organization does appear to be necessary: a Canadian Academy of Social Scientists may be a desirable adjunct to the proposed Human Sciences Research Council.

Independent research in the social sciences has been mainly supported by The Canada Council, which is an autonomous agency supported by the Federal Government. In 1972-73, The Canada Council granted $4,171,676 to support 769 research projects in the social sciences, but of this amount only $64,750 went to 13 education projects, as compared with $657,032 in history and $476,035 in psychology. In contrast, the federal government has continually increased its spending on commissioned research in the social sciences -- this reached $80 million in 1973-74.

So far, this presentation has concentrated upon the federal level, because the proposed re-organization holds a great deal of promise for overcoming many of the difficulties faced previously by educational researchers. But attention must also be paid to the other organizations which sponsor or conduct educational research in Canada -- see Figure 2.

Although many types of these other organizations are involved in educational research, by far the greatest amount of research is conducted by staff and students in the universities. This can be classified as shown in Figure 3, using the bases of emphasis, personnel, time, topic, and source of funding. The amount of research conducted in a faculty of education at a particular university depends upon several factors other than size -- teaching load, interest in research, supporting services, availability of funds, and encouragement by colleagues are all involved, as is the presence or absence of a thesis requirement for a graduate degree.

Most provincial departments of education in Canada also have research divisions which vary considerably in size. The topics which they examine also show variety, but they normally tend to relate to practical problems. The larger school districts have research divisions: most of these seem to be organizers and facilitators of research, rather than conductors of research. Some provinces have research institutes, for example, the Educational Research Institute of British Columbia, which is an independent cooperative agency whose board members include representatives from many educational organizations.

Some of the provincial and national organizations listed in Figure 2 also conduct and/or sponsor research, especially the teachers associations. The Canadian Educational Association is involved in research through

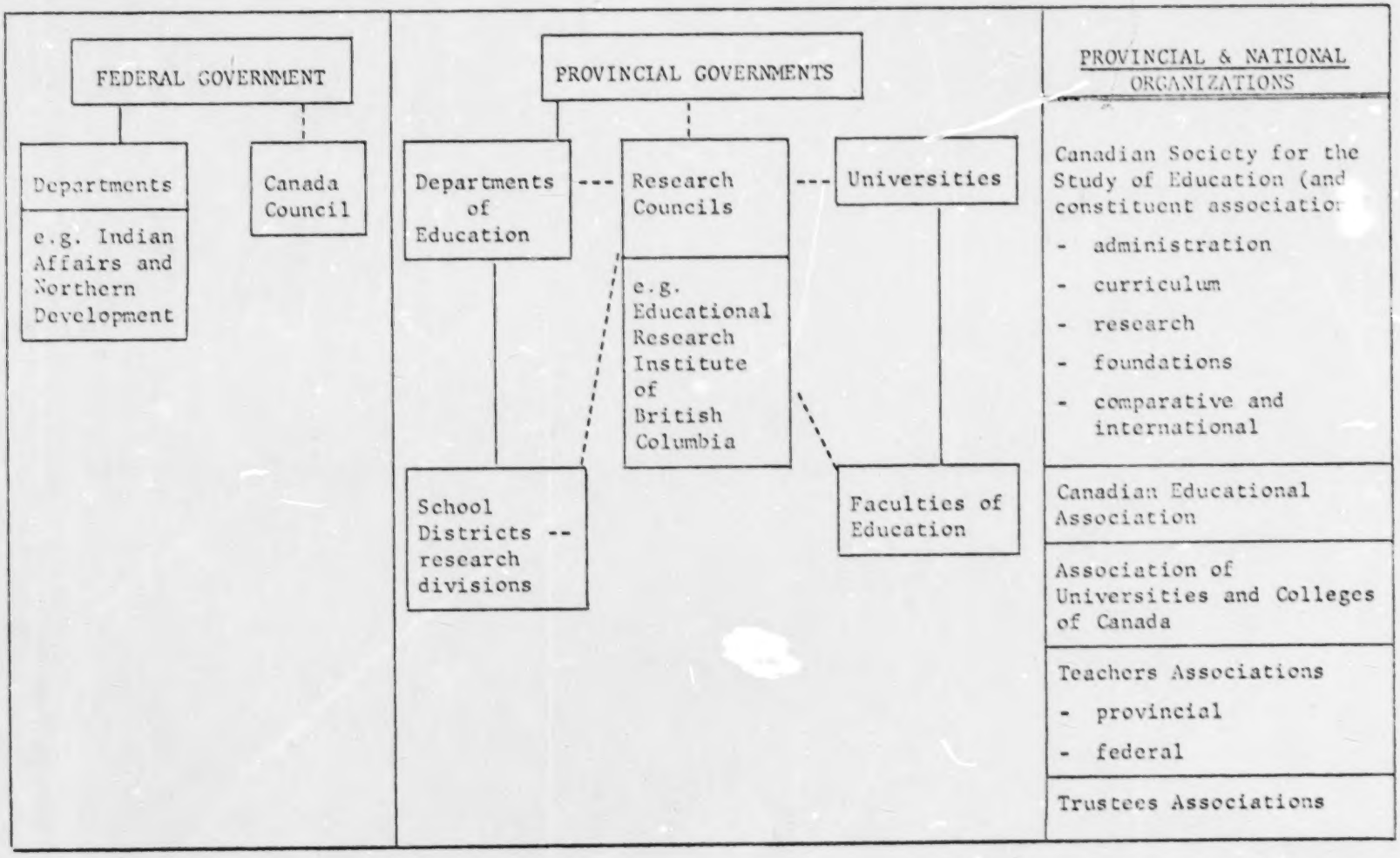

Figure 2. Organizations Which Sponsor or Conduct Educational Research in Canada.

EMPHASIS	BASIC -- usually curiosity-oriented and individually initiated. APPLIED -- usually initiated by a staff member or an organization, e.g. a school board or department of education.	
PERSONNEL	INDIVIDUAL -- Student (M.Ed., or Ph.D.), or staff. TEAM -- Staff and students, or staff.	
TIME	CROSS-SECTIONAL -- at one time -- one set of observations. LONGITUDINAL -- over a period of time -- several sets of observations.	
TOPIC	WITHIN ONE DIVISION OF EDUCATION -- e.g. ed. admin. - one or more subdivisions. INVOLVING MORE THAN ONE DIVISION OF EDUCATION -- e.g. ed. admin. and curriculum. INTERDISCIPLINARY -- involving Education and one or more other disciplines.	
SOURCE OF FUNDING	PRIVATE UNIVERSITY GOVERNMENT AGENCY	SCHOOL DISTRICT GRANTING AGENCY - GOVERNMENT-SUPPORTED - FOUNDATION

Figure 3. Some Bases of Classification of Educational Research.

(1) conducting some studies, (2) preparing research registers, and (3) organizing seminars for research officers of school districts. The fledgling Canadian Society for the Study of Education (established in 1972) consists of university and other personnel interested in educational research -- its 800 members belong to CSSE and to at least one of seven constituent associations. The main CSSE functions are to represent educational research nationally, to conduct conferences, and to prepare publications.

A fundamental difference between Canada and other federal states such as Australia and the U.S.A. must be recognized at the outset. Constitutional and cultural differences will probably prevent the Canadian federal government from becoming involved in a national educational research effort, at least for the foreseeable future.

General Difficulties

Some general major difficulties can be identified in educational research conducted in Canada, particularly with respect to research performed by university personnel. No doubt some of these difficulties are also experienced in other countries. The list is not new -- it has been compiled from many sources, including my experience.

Structure. The over-riding structural difficulty appears to be the lack of formal integration, co-ordination and communication among agencies conducting educational research in Canada. Universities, school districts, and departments of education, even within one province, show little awareness of each other's research. Even within one university, research conducted by individual departments in a faculty of education is commonly unknown to other departments, although different departments may be tackling aspects of the same general problem. Another structural problem involves the lack of a unified educational research lobby at the federal and provincial government levels -- without this voice, politicians remain uninformed about the needs and potential of research. The relationships between funding agencies and researchers and their institutions provides a third type of structural difficulty.

Functions and Types of Research. Some of the more commonly mentioned functional difficulties involved in conducting educational research in Canada are the following.

(1) The universities are insufficiently involved in experimentation with new programs and procedures, that is, they do not participate sufficiently in applied research and development.

(2) Researchers do not concentrate sufficiently upon the formulation of research problems, nor do they try to identify problems of national importance. (Getzels (1974:5) quotes Einstein on this matter: "The formulation of a problem is often more essential than its solution . . . ." Getzels notes that solutions may be transitory, and urges that universities must continue to be involved in asking questions and obtaining information, and not merely deliver technical services or advocate policies.)

(3) Because the United States performs most of the world's educational research, Canadian researchers must examine the need for duplication of U.S. work and the opportunities and priorities for research into Canadian education.

(4) The adjudication of research proposals provides many difficulties with respect to assessment, the time involved (up to a year if over $5,000 is involved), and the usual inability to modify a proposal through meaningful interaction with knowledgeable fellow scholars. This particular difficulty makes contract research more desirable to some university staff.

(5) Research projects are too often "one-shot affairs". Long-term longitudinal projects, in which a series of individual studies can be incorporated, are rarely attempted.

(6) Insufficient attention is paid to the developmental phase of R & D -- some university staff feel that it is not their responsibility, while those who attempt it often encounter considerable difficulty.

Resources. The most commonly mentioned difficulties relate to the numbers and skills of staff in a position to conduct research, and to the shortage of necessary finance. Staff shortages are particularly noticeable in the larger school districts.

Climate of Support. Educational research does not yet appear to be credible. Researchers face negative attitudes because (1) the usefulness of research is not always clearly explained, (2) universities sometimes impose what are seen to be heavy demands for involvement, (3) promised feedback is not always forthcoming, and (4) practitioners often expect immediately applicable results, and do not realize how much research is often required to find "solutions". Senior administrators seldom consider research findings when making decisions: perhaps this occurs because we have not been able to answer this question convincingly: "What has educational research contributed to practice?"

Evaluative Criteria. All educational researchers face the difficulty of establishing criteria by which particular results obtained from their research can be judged.

2. UNIVERSITY RESEARCH IN EDUCATIONAL ADMINISTRATION IN CANADA

Establishment of the Division of Educational Administration at The University of Alberta in 1956 marked the beginning of organized teaching and research in educational administration in Canada. This beginning, assisted by a grant from the Kellogg Foundation, was modest with few staff and graduate students but during the 1960's increasing numbers of graduates were produced, many of whom assumed university positions in educational administration across Canada, and in other countries, especially Australia.

By 1972-3, as shown by the enrolment data in Table 1, the major universities in Canada all had graduate programs in educational administration. The non-thesis route was elected most frequently by masters students, particularly those studying part-time in Ontario and Quebec. Since introduction of the non-thesis M.Ed. program at The University of Alberta in 1970, the numbers of students selecting the thesis route has fallen in successive years from 45 to 22 to 13 to 7. This decrease obviously affects the research productivity of a department, even though most non-thesis students participate in some project activity. "Projects" are staff-initiated research activities: one Alberta example involved a feasibility study into the possible establishment of a new post-secondary college in a rural area: students were involved in interviewing and report-writing.

However, the growth of departments of educational administration across Canada has meant an overall increase in research production. This increase was not accompanied by a corresponding development of a formal communication network, so staff in different universities were not really aware of each other's research. Formation of The Canadian Association for the Study of Educational Administration (CASEA) was partly in response to this need for better formal communication, not only with respect to research, but also in program development.

Some Trends

Some general trends in research topics have been discerned in the Department of Educational Administration at The University of Alberta. With respect to thesis subject matter, the following sequence was identified by Dr. E.D. Hodgson.

TABLE 1

NUMBER OF STUDENTS ENROLLED IN FULL-TIME AND PART-TIME STUDY AT BOTH MASTERS AND DOCTORAL LEVELS, 1972-73

University	Master's Full-Time		Master's Part-Time		Doctoral	
	Thesis	Non-Thesis	Thesis	Non-Thesis	Full-time	Part-time
Acadia	5		11			
Alberta	14	31	15	22	29	10
British Columbia		3		13	6	5
Calgary	12	1	10	18	1	
Dalhousie	3		43			
Laval	22		11		1	4
Manitoba	7		80		3	
McGill	2	4	16	110		
Memorial	39					
Moncton		1		10		
New Brunswick	6		60			
Ottawa	1	18	12	382	15	86
OISE*	6	11	6	199	16	10
Queen's		4	1	91		
Quebec (T-R)	2	7	8	26		
St. Mary's	2		10			
Sask. (Saskatoon)	8		37			
Sask. (Regina)	1		17	1		
Sherbrooke				74		
Simon Fraser	1	34				
Victoria			20			
Totals	131	114	357	946	71	115
Total Full-Time	245				71	
Total Part-Time			1303		115	

*M.A. and Ph.D. students at OISE are designated as part-time since they have completed their full-time residence.

Notes:

1. Table taken from E. Miklos, "Preparation Programs for Educational Administrators in Canada," Canadian Association for the Study of Educational Administration, 1973.

2. Some universities also offer a Graduate Diploma of Educational Administration, following a B.Ed. or equivalent program: Alberta currently has about 300 such students.

1. Role studies -- of superintendents, principals, vice-principals, supervisors.
2. Leadership studies.
3. Organization studies -- bureaucracy, professionalism, interaction analysis, organizational climate, etc.
4. As staff increased in size and in variety of interests, the above three kinds of studies continued, but they tended to be over-shadowed by studies related to the following:
   (a) Finance and Planning
   (b) Post-Secondary Education
   (c) History, Political Science, Law
   (d) Cultures and Acculturation
5. Our present thesis topics appear to deal very largely with operational questions about schools and school systems (administrative staff ratios, personnel utilization, expenditures and achievement, administrator-faculty conflict, salaries and working conditions, teacher evaluation, comparison of innovative high schools, etc.).

A trend to some longitudinal research has also occurred, e.g. in studying administrative ratios and innovation. Although such longitudinal emphasis is desirable and recommended, planning of long-term continuing research is not easy -- problems of continuity of staff and funding, and foresight in seeing how one phase can lead to another, are some example of difficulties.

The organization of research is likewise undergoing some evolutionary changes. More project work is now being conducted. Some of this is in teams of staff and students, frequently in response to a problem identified by a school system, a department of education, or a post-secondary college. This may involve contract research, as in the case of a current major evaluation of the system of Regional Offices of Education in Alberta, or individual non-funded studies. These projects also include some research activities undertaken as requirements for particular graduate level project courses.

Five other Canadian universities supplied information about their educational administration research, particularly with respect to these two questions:

(a) Do you have any policies (explicit or implicit) concerning the basic-applied emphasis which is acceptable for thesis research?

(b) Has any trend occurred in the relative amounts of each of contractual and scholar-generated research undertaken by your staff?

The following briefly summarizes the responses of these universities.

BASIC-APPLIED EMPHASIS ACCEPTABLE FOR THESES

University 1 — Research should have practical use, i.e. provide information on actual operational educational problems: whether this always occurs is questionable.

University 2 — Both basic and applied research are acceptable: the criteria are rigorous methodology and educational significance.

University 3 — A substantial theoretical base is required, and theses are theoretical rather than applied. More emphasis on investigating practical problems is desirable, but we lack knowledge of appropriate methodology.

University 4 — Even if a thesis deals with actual problems, it must be presented within a theoretical framework.

University 5 — All research must have a substantial theoretical base, but students are encouraged to provide information dealing with actual problems of educational systems. Such systems are granting increased access provided that a feedback mechanism is incorporated in the proposal.

TRENDS IN RELATIVE AMOUNTS OF CONTRACTUAL AND SCHOLAR-GENERATED RESEARCH

University 1 — Very little contractual research: a university cannot be heavily involved in both research and teaching functions.

University 2 — Mostly staff-generated.

University 3 — Because the provincial government now grants substantial research contracts, most staff research has been of this type. However, teaching occupies much more staff time than does research.

University 4 — Some very substantial contracts have been placed by school districts and the principals' federation. However, these research contracts are only accepted when they do not interfere with regular university instruction and other activities.

University 5 — The amount of contractual research is continuing to increase. Joint research involving school districts may see the districts requesting provincial funds. However, control by the provincial government over release of reports from projects they have funded causes concern.

OTHER COMMENTS ON CONDUCTING EDUCATIONAL ADMINISTRATION RESEARCH

University 1 — Four defects: (1) insufficient finance, (2) fragmentation of interests and expertise, (3) poor conceptualization, (4) inadequate dissemination.

University 2	Funding has been limited, but the provincial Department of Education is showing interest for special projects. University support of graduate students has been too limited.
University 3	Biggest problem concerns development of a research infrastructure, especially employment for at least a year of skilled research assistants.
University 4	The main problems are (1) funding and (2) coordination of R & D with regular student instruction.

Some Examples of University Educational Administration Research

The following examples of recent research in Canada may be of interest. They show different types of staff involvement, source of initiation, funding, topics, orientation and length of the period of data collection (see Table 2). Because of space considerations and the numbers of people involved, the researchers have not been identified.

1. Evaluation of Regional Offices of Education in Alberta. ROE were established in Alberta in 1971. Information and opinions concerning their operation were collected in 1974 from ROE coordinators and consultants, principals and teachers, school district superintendents and other central office staff, and school trustees. This study was commissioned by the Department of Education and conducted by the Department of Educational Administration at The University of Alberta: the findings and recommendations will be the subjects of discussion between staff of these two organizations.

2. Administrative Ratios in School Systems. An integrated series of studies was conducted between 1966-73 at The University of Alberta. Successive studies expanded and modified the definitions of staffing components and size, incorporated examination and comparison of school districts and schools, introduced some longitudinal aspects, and examined salary costs of various components.

3. Organization of Special Education in a Region. In central Alberta, 21 school systems have formed a regional school district to administer a Learning Assistance Project which is providing special education services for their estimated 5,000 children who have some form of learning disability. This move was prompted because many smaller systems could not afford the needed services. The Department of Education is evaluating, by means of contracted research, the effectiveness of this new approach upon the children's performance. One of our doctoral students is separately assessing the effectiveness of the organization of this approach -- this includes the

Table 2

CLASSIFICATION OF SOME RECENT CANADIAN RESEARCH IN EDUCATIONAL ADMINISTRATION

Topic	Personnel		Source of idea	Source of funding	Time orientation	Major type
	Staff	Students				
Evaluation of Regional Offices of Education in Alberta	7	2 M.Ed.	Department of Education	Department of Education	C-S	Applied
Administrative Ratios in School Systems	1	2 Ph.D. 6 M.Ed.	Staff	Department of Education; Canada Council; Foundation	C-S and L	Pure & oriented basic
Organization of Special Education in a Region	-	1 Ph.D.	Staff and Department of Education	Department of Education	C-S	Applied
Organization of Substitute Teacher Service	1	2 M.Ed.	School District	Foundation; School District	C-S	Applied
Consultative Needs of Teachers	1	1 M.Ed. 1 Ph.D.	Staff	Students; University	C-S	Oriented basic & applied
Evaluation of Thailand Administrative Training Program in Alberta	2	2 M.Ed.	Staff	University	C-S and L	Oriented basic & applied
Teachers' Perception of Supervisory Roles	1	4 M.Ed.	Staff	Faculty	C-S	Applied
Use by School Divisions of Recommended Budgetary Procedures	-	1 M.Ed.	Staff and Student	Student	C-S	Applied
Bureaucracy, Teacher Personality Needs, and Teacher Satisfaction	-	1 Ph.D.	Staff	Faculty	C-S	Oriented basic & applied

obtaining of opinions by questionnaires and interviews from principals, teachers and the specialists who work with the learning-disabled children.

The theoretical framework of the study is based on that provided by Lawrence and Lorsch (1967) in their discussion of the integration of differentiated parts in an organization, particularly with respect to environmental demands.

They hypothesized that greater differentiation in an organization was associated with greater environmental uncertainty, and that successful integration depended upon effective conflict resolution. Derr and Gabarro (1972), in applying the theory of Lawrence and Lorsch to education, found that the more adaptive school systems had structures which emphasized joint decision-making and conflict resolution, and had more elaborate integrative mechanisms.

The following hypothesis is to be tested in the regional school district: "The success of the Project in each of its interacting environments will be positively associated with the state of integration which exists between the Project and that environment".

4. Organization of Substitute Teacher Service. The personnel officer of a school district in Alberta suggested that the provision of substitute teachers should be examined. Accordingly, one M.Ed. student conducted a survey in 1970 throughout the province and obtained several generalizations. A second M.Ed. student in 1971-72 extended the study by building upon results of the first study and examining in depth the substitute teacher practices in Edmonton. Several detailed recommendations were made.

5. Consultative Needs of Teachers. Reference has been made in the literature to the desirability of teachers identifying their own needs with respect to improvement of instruction, rather than relying solely upon observers for this identification. One school district was interested in obtaining information on its teachers' perceptions of their needs, and cooperated in allowing an M.Ed. student to collect his thesis data by questionnaire and interview. Following discussion of the results, the district was interested in further research in this area. A Ph.D. student this year has interviewed all 75 elementary teachers to determine needs, and to examine by sociometric methods the interaction patterns used by teachers to obtain the needed information.

6. Evaluation of the Thailand Administration Training Program. 123 Thai secondary school educators involved in development of comprehensive schools studied for the Diploma of Educational Administration at The University of Alberta in five classes between 1966 and 1971. With limited financial assistance, two staff and two M.Ed. students analyzed the performance of the Thai groups on a longitudinal basis. One major aspect of the evaluation focused upon the tests (especially the E.T.S. Test of English as a Foreign Language, TOEFL) used to predict academic success.

7. Teachers' Perceptions of Supervisory Roles. Four M. Ed. students worked with a staff member in Newfoundland to determine the opinions of primary (G1-3), elementary (G4-6), junior high and senior high school teachers concerning aspects of supervisory behavior. Teachers were asked to name the most influential and effective types of supervisors, e.g. principal, district specialist. The relationships among this perceived influence and effectiveness and eight selected school and teacher variables, e.g. size of school, and sex of teacher, were examined.

8. Extent of Use of Recommended Budgetary Procedures. Questionnaires were mailed to school superintendents and secretary-treasurers in school divisions in Manitoba to survey the extent to which budgetary procedures recommended by the Department of Education were being employed. The financial aspects of budgeting were also examined in relation to the educational program and comprehensive educational planning.

9. Relationships among Bureaucracy, Teacher Personality Needs and Teacher Satisfaction. This Ottawa study tested Getzels' postulate that satisfaction is a function of the congruence between institutional requirements and individual need-dispositions. The institutional and satisfaction dimensions referred to bureaucratic characteristics, and the personal dimensions to teacher personality needs. Female teachers in both high bureaucratic schools and low bureaucratic schools constituted the sample.

3. SUGGESTIONS FOR CONDUCTING R & D IN EDUCATIONAL ADMINISTRATION

The following suggestions are based upon the literature, our experience at The University of Alberta, and opinions of researchers in other Canadian organizations. They are thought to be generally applicable, regardless of the length of time for which R & D in educational administration has been conducted in any particular country or region. Most of these

suggestions are applicable to all educational research, and not merely that in administration. The classification of suggestions under (1) structure, (2) functions and types of research, (3) resources, and (4) climate of support is that used earlier in describing some general difficulties.

Structure

1. Institutions involved in conducting R & D should ensure that their internal structures (e.g. time allocations, communications) are adequate -- this applies to universities, department of education, school districts, and research institutes.

2. Such institutions should ensure that the structural links among themselves are adequate: such links may be strengthened by formation of national and state/provincial research associations. Particular attention should be paid to inter-university communication.

Functions and Types of Research

1. Universities. (a) University staff should concentrate upon scholar-generated research, should try to identify and tackle research problems on a longitudinal basis, and endeavor to incorporate some thesis research into their overall research activity.

(b) University staff should be free to work on both pure and oriented basic research without governments or granting agencies expecting immediately applicable results.

(c) University staff should be free to undertake some contract research.

(d) University staff should investigate proposed new programs and procedures prior to implementation, and conduct follow-up studies.

(e) University staff should undertake more multi-disciplinary R & D: those in educational administration should particularly consider joint projects with economists, geographers, political scientists, sociologists, and social psychologists, as well as those in other faculty of education departments.

(f) University staff should be actively involved in precise identification and statement of R & D problems.

2. Departments of Education should be primarily concerned with R & D functions related to:

(a) provision of financial support to R & D;

(b) identifying major problems related to a country/state/province and initiating appropriate R & D activity, preferably in conjunction with other researchers;

(c) obtaining information necessary for planning and resource allocation.

3. Larger school districts should be primarily concerned with:

(a) coordination of research activities involving their personnel;

(b) sponsoring action research by teachers;

(c) identifying major problems related to their district operations and initiating appropriate R & D activity, preferably in conjunction with other researchers;

(d) obtaining information necessary for planning and resource allocation.

4. All institutions should concentrate more upon the developmental aspects of R & D -- the developmental activities should be considered in the initial planning of a project. They should also carefully examine successful educational operations, and not continually be researching problems concerned with operational difficulties.

Resources

1. Adequate staff, finance and facilities should be provided in the different types of organizations.

Climate of Support

1. R & D staff should endeavor to change the attitudes of teachers, administrators and politicians towards educational research by demonstrating the positive contributions that R & D can make, and by involving some or all of these groups in planning R & D. An effort should be made to demonstrate to practitioners that any single basic research project is not usually amenable to developmental activities -- several or even many may be required.

2. R & D staff should integrate some of their demands for data collection, and build in appropriate feedback and developmental activities.

To conclude, I feel that by following some or all of these suggestions, we may be able to answer the question of what R & D has contributed to education in a more convincing way than we can at present. Nevertheless, in the field of educational administration research we should not be too negative -- our R & D base has developed well in the past twenty years and is currently expanding. We may need now to begin serious developmental activity using this knowledge.

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